Raquel Pinto – 92948, Alexandre Oliveira – 93282 (P2G9)

Guião 9

Problema 9.1:

#	Query	Rows	Cost	Pag. Reads	Time (ms)	Index used	Index op.
1	select * from Production.WorkOrder	72591	0,47	552	1080	WorkOrderID	Clustered Index Scan
2	select * from Production.WorkOrder where WorkOrderID=1234	1	0,0032	26	48	WorkOrderID	Clustered Index Scan
3a	SELECT * FROM Production.WorkOrder WHERE WorkOrderID between 10000 and 10010	11	0,0032	26	107	WorkOrderID	Clustered Index Scan
3b	SELECT * FROM Production.WorkOrder WHERE WorkOrderID between 1 and 72591	72591	0,473	554	1033	WorkOrderID	Clustered Index Scan
4	SELECT * FROM Production.WorkOrder WHERE StartDate = '2007-06-25'	55	0,473	1157	290	WorkOrderID	Clustered Index Scan
5	SELECT * FROM Production.WorkOrder WHERE ProductID = 757	9	0,032	44	104	ProductID	Index Seek non Clustered
6a	SELECT WorkOrderID, StartDate FROM Production.WorkOrder WHERE ProductID = 757	9	0,0032	26	8	ProductID Covered	Index Seek non Clustered
6b	SELECT WorkOrderID, StartDate FROM Production.WorkOrder WHERE ProductID = 945	1105	0,0059	30	78	ProductID Covered	Index Seek non Clustered
6c	SELECT WorkOrderID FROM Production.WorkOrder WHERE ProductID = 945 AND StartDate = '2006-01-04'	1	0,0059	32	10	ProductID Covered	Index Seek non Clustered
7	SELECT WorkOrderID, StartDate FROM Production.WorkOrder WHERE ProductID = 945 AND StartDate = '2006-01-04'	1	0,0081	33	54	ProductID and StartDate	Index Seek non Clustered
8	SELECT WorkOrderID, StartDate FROM Production.WorkOrder WHERE ProductID = 945 AND StartDate = '2006-01-04'	1	0,0032	222	26	Composite	Index Seek non Clustered

Problema 9.2:

a) CREATE TABLE mytemp (
rid BIGINT IDENTITY (1, 1) NOT NULL,
at1 INT NULL,
at2 INT NULL,
at3 INT NULL,
lixo varchar(100) NULL,
primary key clustered (rid)
);

b) Inserted 50000 total records

Milliseconds used: 68376

Page fullness: 70,55 %
Total fragmentation: 99,26 %

c)

i) fillFactor=65
Inserted 50000 total records
Milliseconds used: 72126
Page fullness: 69,61 %
Total fragmentation: 99,39 %

ii) fillFactor = 80
Inserted 50000 total records
Milliseconds used: 72566
Page fullness: 67,48 %
Total fragmentation: 98,71 %

iii) fillFactor = 90
Inserted 50000 total records
Milliseconds used: 71100
Page fullness: 68,86 %
Total fragmentation: 98,68 %

d) Inserted 50000 total record
Milliseconds used: 63016

e) Inserted 50000 total record
Milliseconds used: 92166

O uso de índices melhora o tempo de consulta, contudo aumenta o tempo de inserção. Por isso, o tempo na inserção com índices (alínea E -> 92166 ms) foi maior do que na inserção sem índices (alínea D -> 63016 ms).

Problema 9.3:

a) i)

Tabela	Índices
EMPLOYEE	Ssn – unique clustered index
DEPARTMENT	Dnumber – unique clustered index
DEPT_LOCATIONS	Dnumber,Dlocation – composite clustered index Dlocation, Dnumber – composite non-clustered index
PROJECT	Pnumber – unique clustered index
WORKS_ON	Pno, Essn – composite clustered index
DEPENDENT	Essn, Dependent_name – composite clustered index

ii)

Tabela	Índices
EMPLOYEE	Fname,Lname – composite clustered index
DEPARTMENT	Dnumber – unique clustered index
DEPT_LOCATIONS	Dnumber, Dlocation – composite clustered index Dlocation, Dnumber – composite non-clustered index
PROJECT	Pnumber – unique clustered index
WORKS_ON	Pno, Essn – composite clustered index
DEPENDENT	Essn, Dependent_name – composite clustered index

iii)

Tabela	Índices
EMPLOYEE	Dno – clustered index
DEPARTEMENT	Dnumber – unique clustered index
DEPT_LOCATIONS	Dnumber, Dlocation – composite clustered index Dlocation, Dnumber – composite non-clustered index
PROJECT	Pnumber – unique clustered index
WORKS_ON	Pno, Essn – composite clustered index
DEPENDENT	Essn, Dependent_name – composite clustered index

iv)

Tabela	Índices
EMPLOYEE	Ssn – unique clustered index
DEPARTEMENT	Dnumber – unique clustered index
DEPT_LOCATIONS	Dnumber, Dlocation – composite clustered index Dlocation, Dnumber – composite non-clustered index
PROJECT	Pnumber – unique clustered index
WORKS_ON	Pno, Essn – composite clustered index
DEPENDENT	Essn, Dependent_name – composite clustered index

v)

Tabela	Índices
EMPLOYEE	Ssn – unique clustered index
DEPARTEMENT	Dnumber – unique clustered index
DEPT_LOCATIONS	Dnumber, Dlocation – composite clustered index Dlocation, Dnumber – composite non-clustered index
PROJECT	Pnumber – unique clustered index
WORKS_ON	Pno, Essn – composite clustered index
DEPENDENT	Essn, Dependent_name – composite clustered index

vi)

Tabela	Índices
EMPLOYEE	Ssn – unique clustered index
DEPARTEMENT	Dnumber – unique clustered index
DEPT_LOCATIONS	Dnumber, Dlocation – composite clustered index Dlocation, Dnumber – composite non-clustered index
PROJECT	Dnum – clustered index Pnumber – unique non-clusteres index
WORKS_ON	Pno, Essn – composite clustered index
DEPENDENT	Essn, Dependent_name – composite clustered index